CLAIMS

What is claimed is:

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- A method for measuring the electromotive force constant of a motor, comprising steps of: enabling the motor to rotate in single phase mode;
- 5 measuring phase voltages of the motor when the motor rotates to a predetermined velocity; and

obtaining the electromotive force constant of the motor according to the relationship of the phase voltages and the predetermined velocity.

- 2. The method of claim 1, wherein the motor comprises a three-phase permanent magnet motor.
- 3. The method of claim 2, wherein one phase of the motor is open, and the other two phases are connected in series.
- 4. The method of claim 1, wherein the relationship of the phase voltages and the $v_{\omega}(t) = K_{emax} \cos\left(\theta_r + \frac{2\pi}{3}\right) \omega_r = \left(\frac{v_a + v_b 2v_c}{-3}\right) \left(\frac{P}{2}\right)$, wherein v_a , v_b , v_c are the phase voltages of the motor, ω_r is the velocity of the motor, K_{emax} is the electromotive force constant of the motor, θ_r is the electrical angle of the rotator of the motor, P is the number of the magnetic pole of the rotator magnet.
 - 5. The method of claim 4, wherein the velocity of the motor is output from a velocity encoder.
- 6. The method of claim 4, wherein the electromotive force is the accelerating current peak value of the integral of the relationship of the phase voltages and the predetermined velocity.

- 7. The method of claim 1, wherein the single phase mode is driven by a three-phased driver.
- 8. The method of claim 7, wherein the driver continues providing currents when the motor rotates to the predetermined velocity.
- 9. The method of claim 7, wherein the driver stops providing currents when the motor rotates to the predetermined velocity.

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- 10. The method of claim 1, wherein the single phase mode is driven by a one-phased driver.
- 11. The method of claim 10, wherein the driver continues providing currents when the motor rotates to the predetermined velocity.
- 12. The method of claim 10, wherein the driver stops providing currents when the motor rotates to the predetermined velocity.